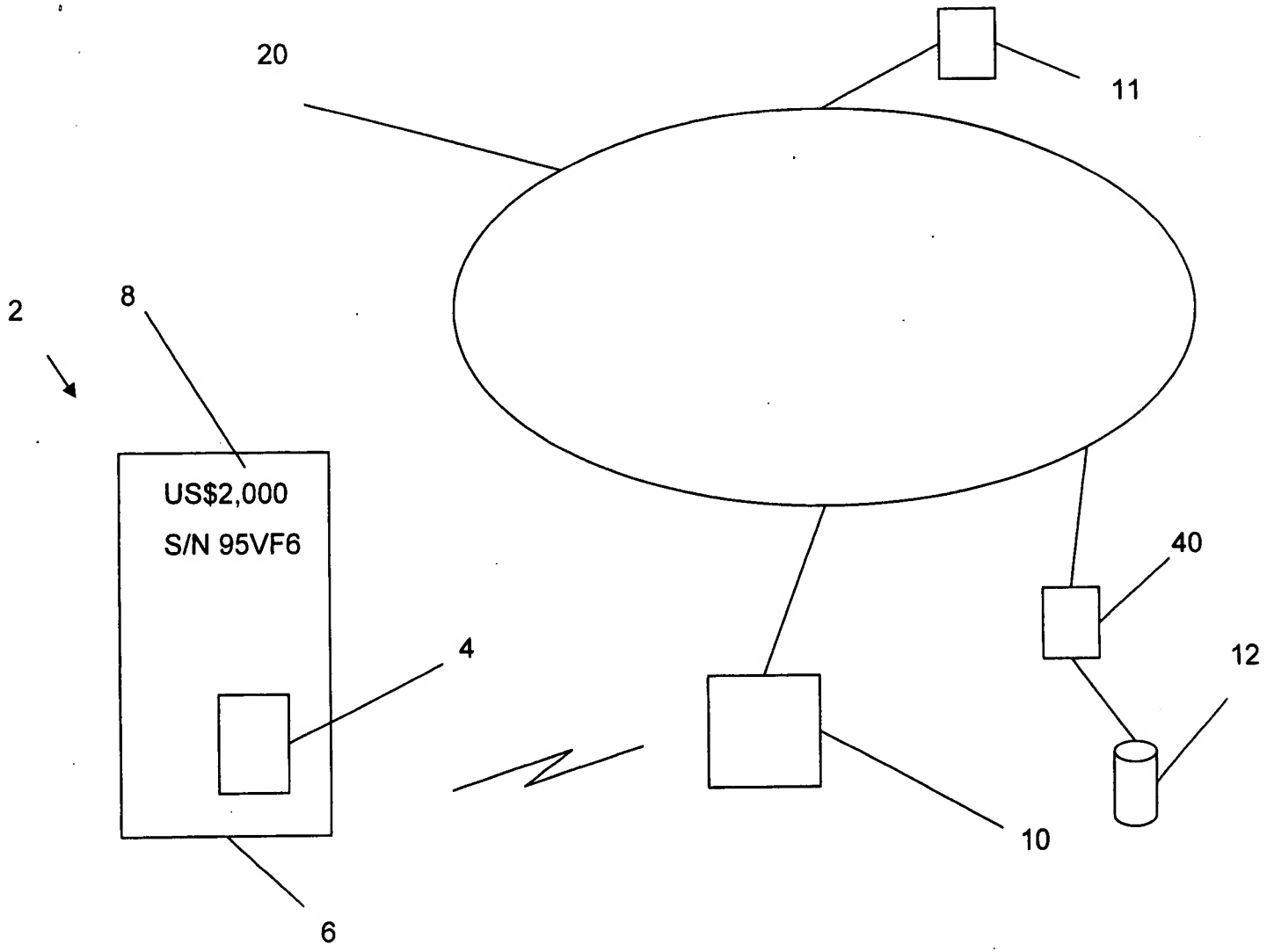

FIG. 1

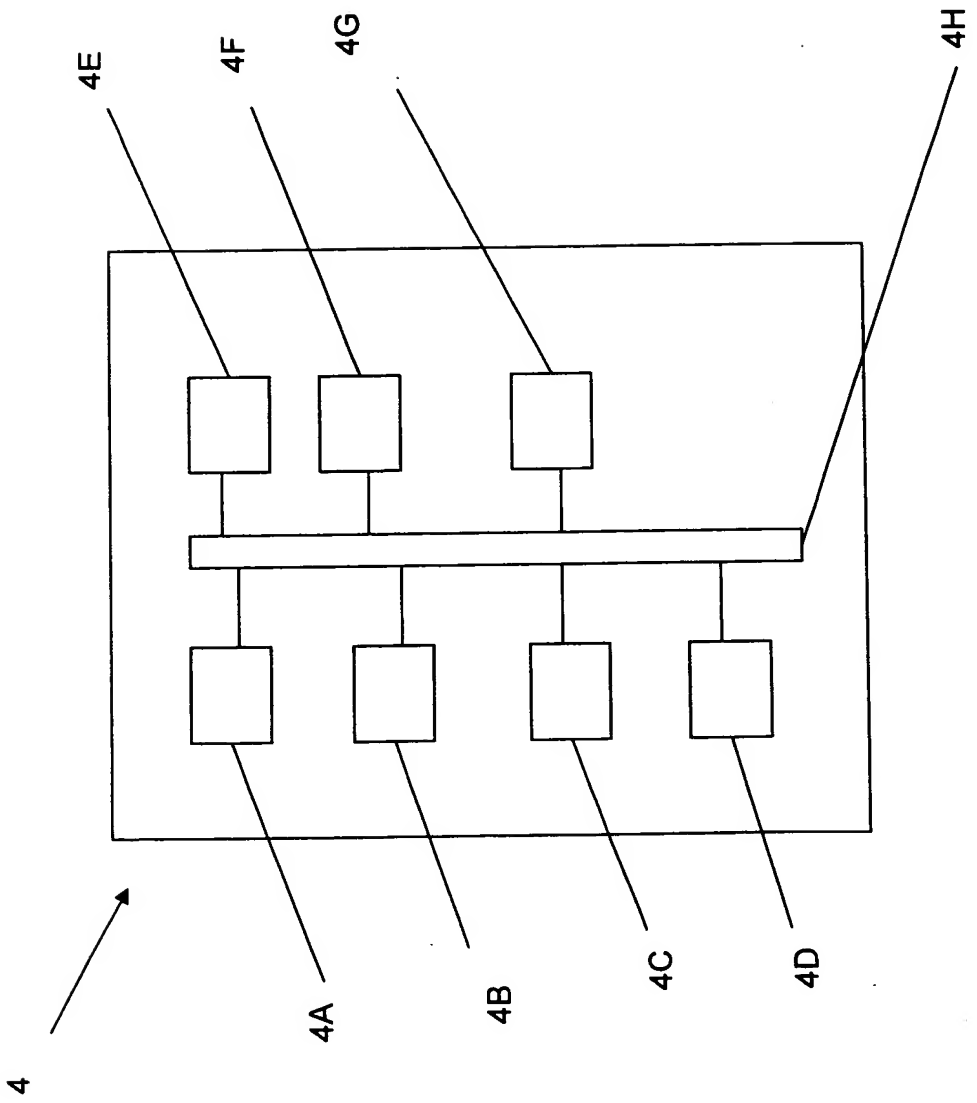

FIG. 2

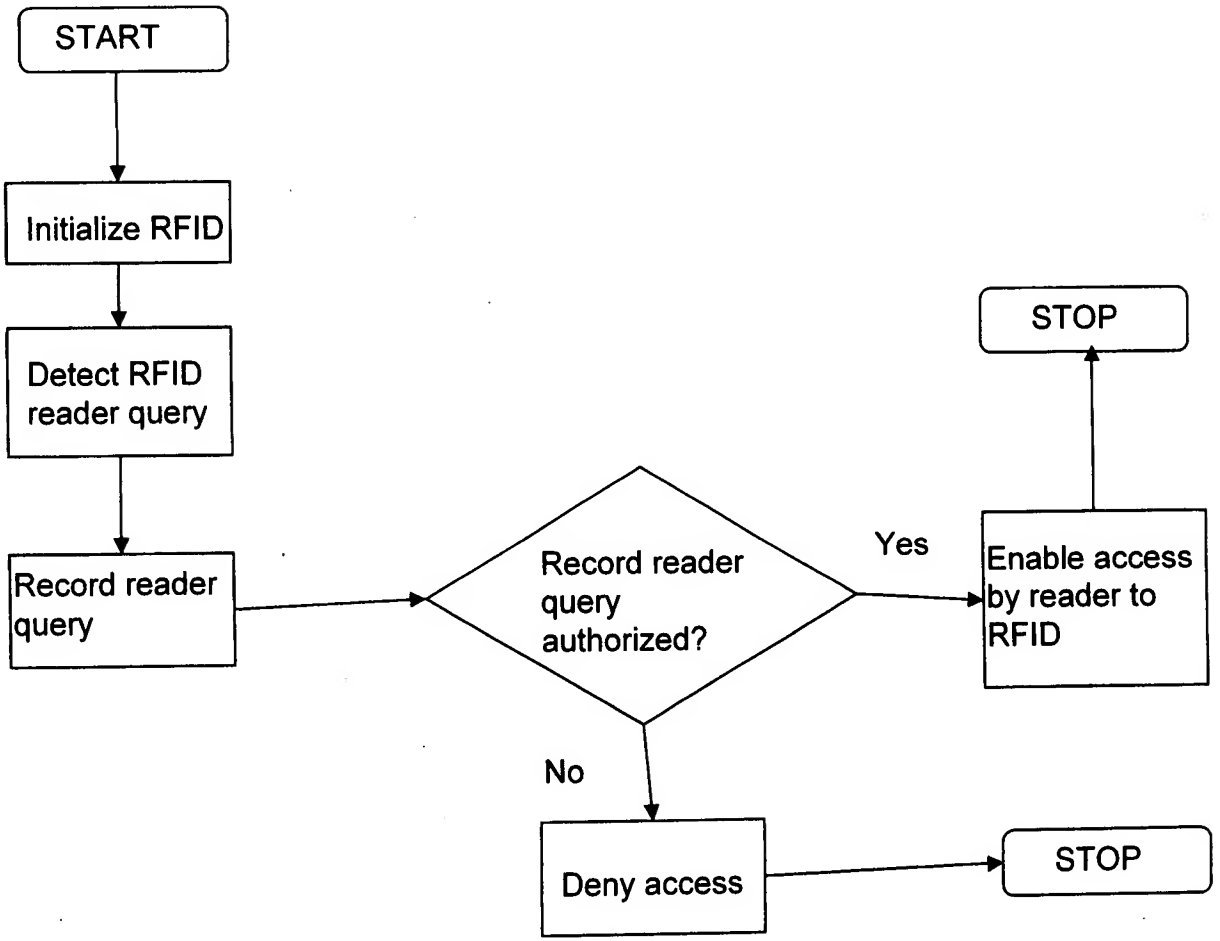
START
Initialize RFID
Detect RFID reader query
Record reader query
Record reader query authorized?
Yes
No
Enable access by reader to RFID
STOP
Deny access
STOP

FIG. 3

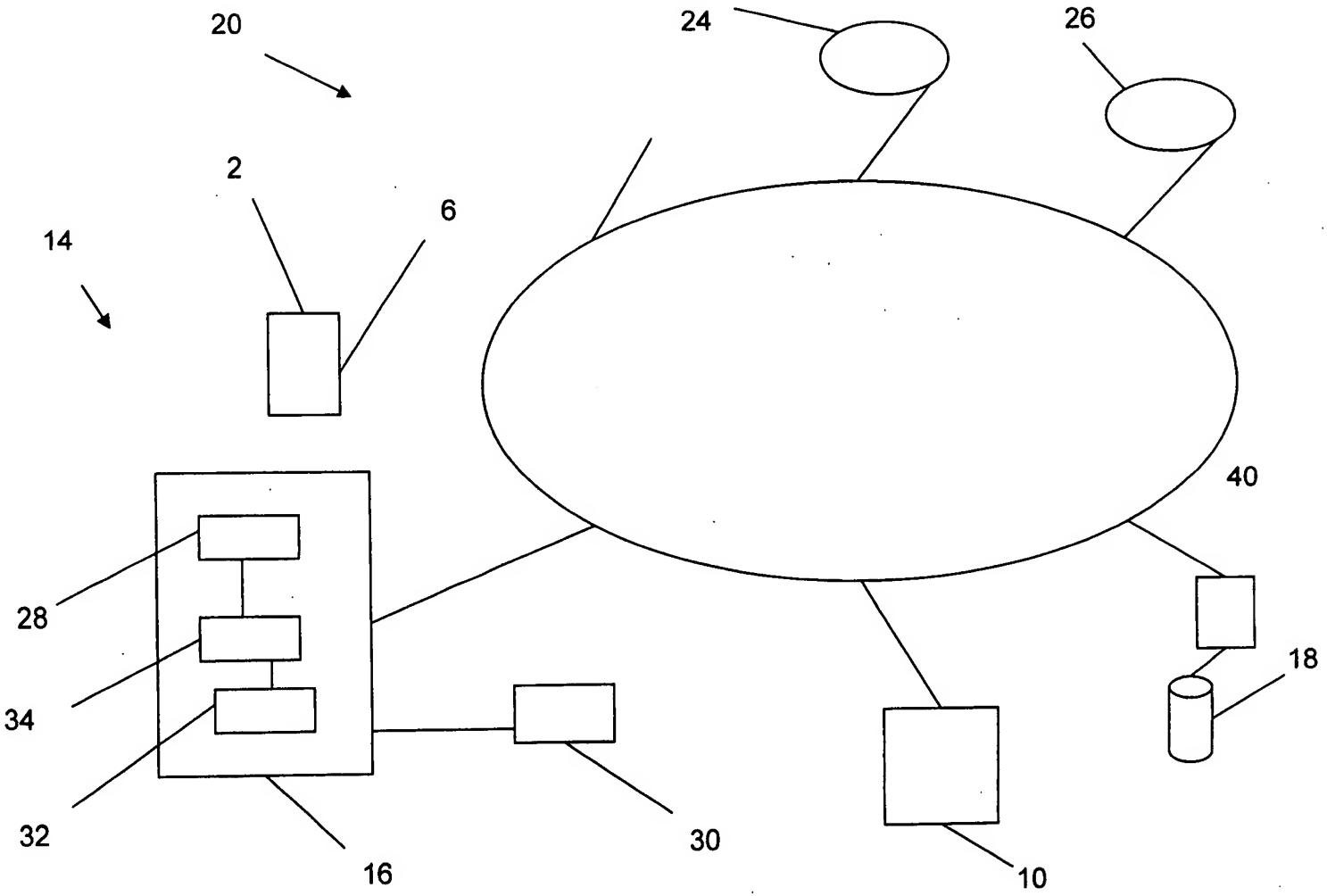

FIG. 4

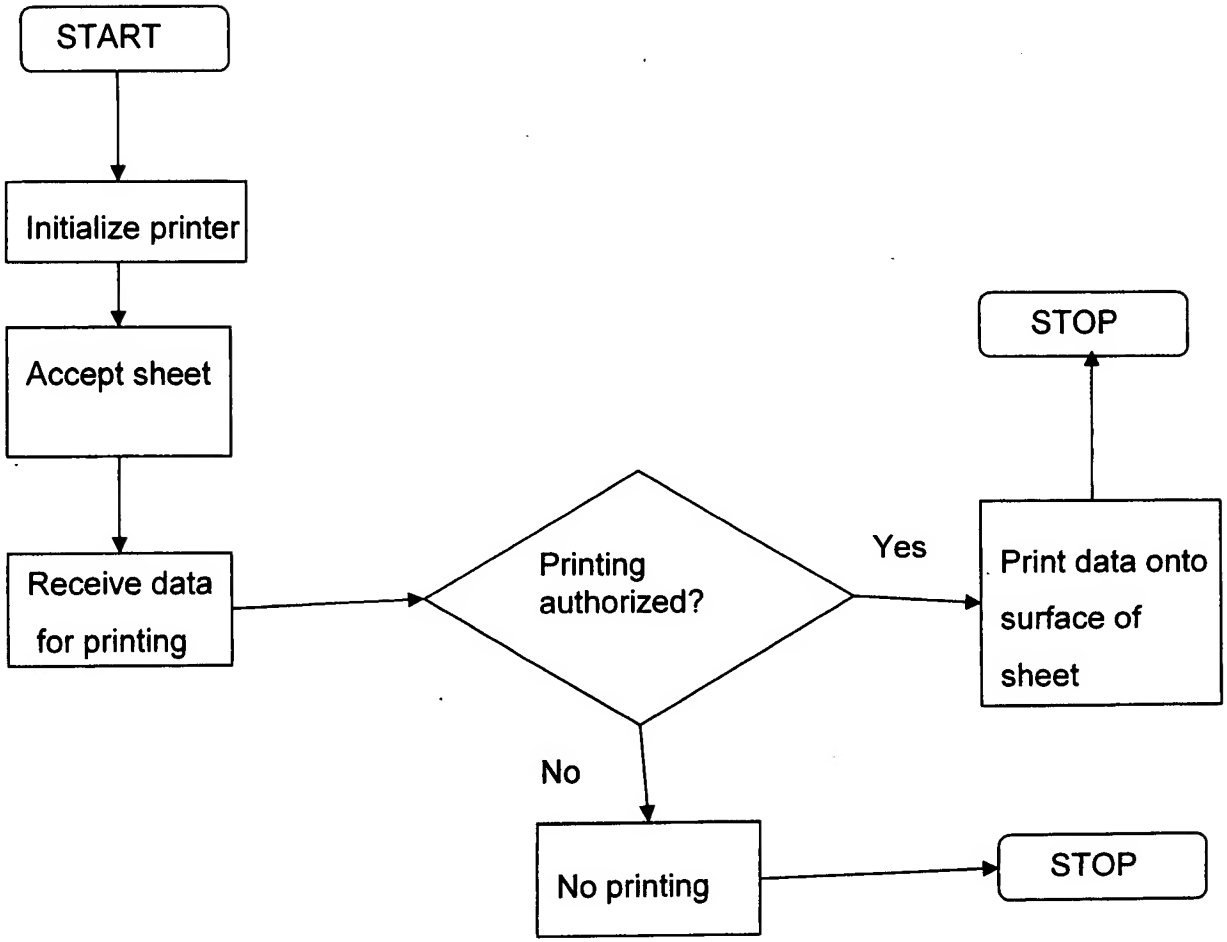
START
Initialize printer
Accept sheet
Receive data for printing
Printing authorized?
Yes
No
Print data onto surface of sheet
STOP
No printing
STOP

FIG. 5

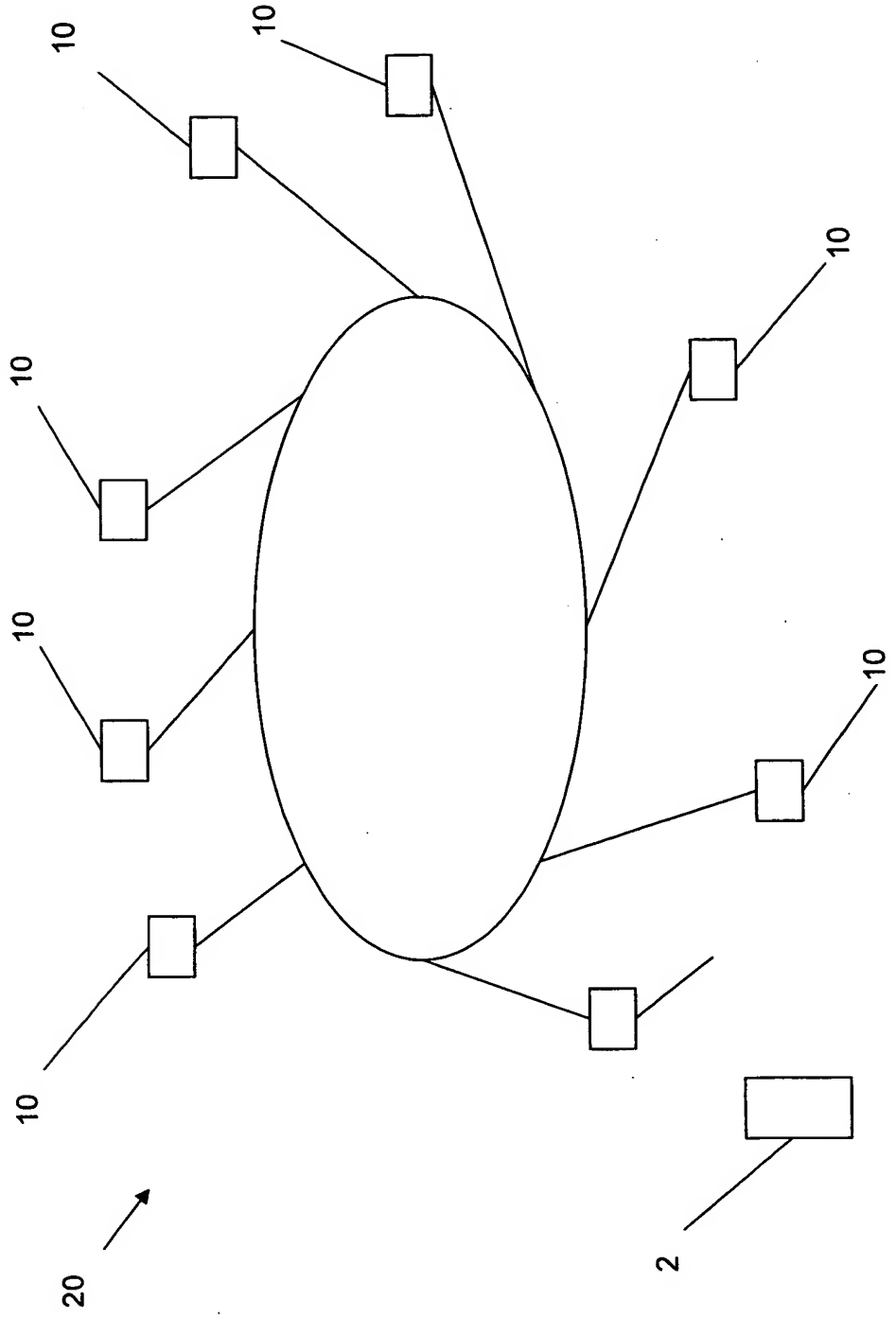

FIG. 6

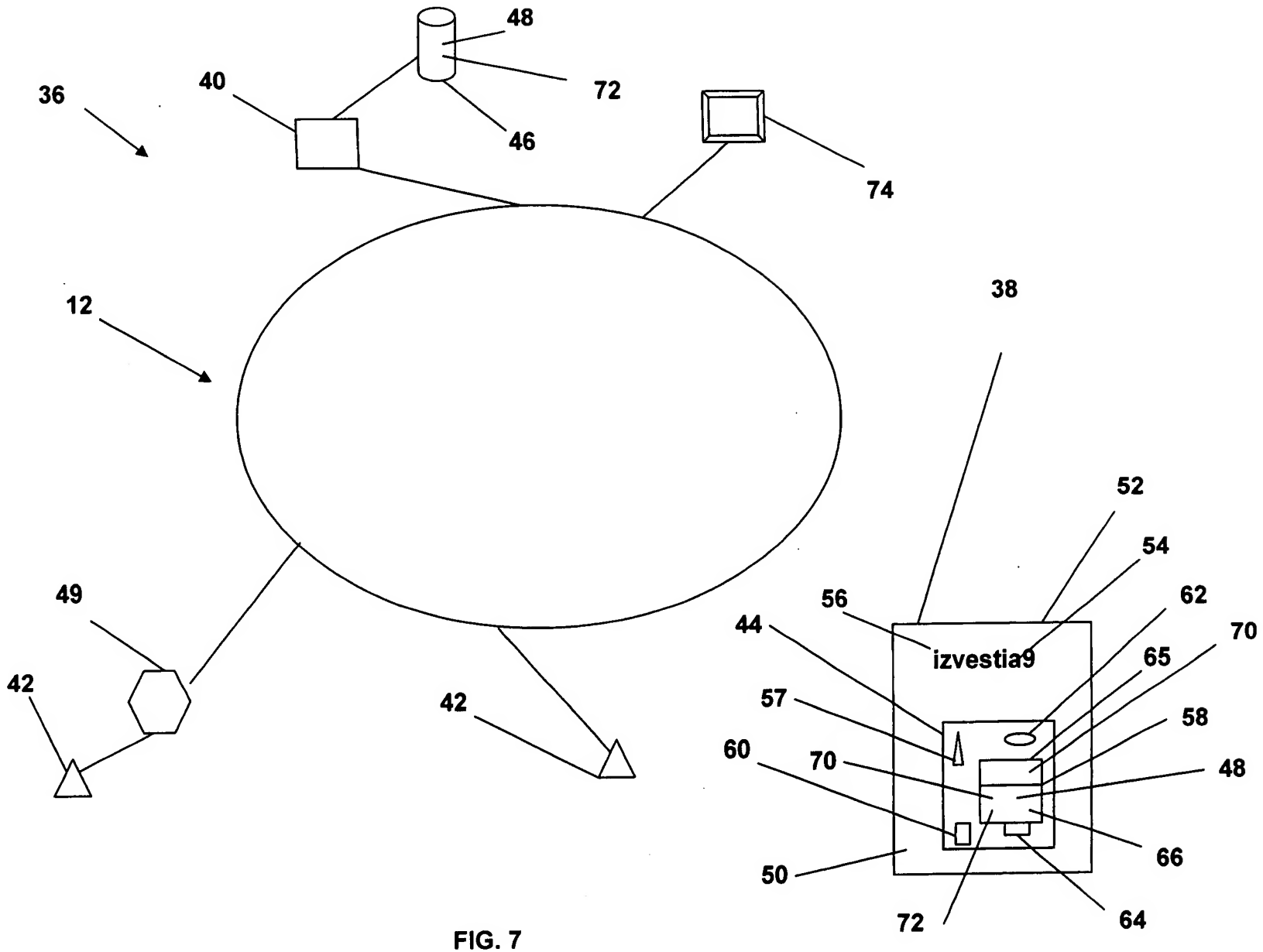
48
72
46
40
36
74
12
38
52
54
56
62
70
44
izvestia9
65
57
58
60
70
48
66
50
72
64
49
42
42

FIG. 7

START

STEP 1 Establish a first authorization key.

STEP 2 Provide the first authorization key to the RFID.

STEP 3 Program the privacy circuit of the RFID to identify messages formatted, encrypted and/or encoded at least partially on the basis of the first authorization key.

STEP 4 Provide the first authorization key to the computer.

STEP 5 Format, encrypt or encode a message least partially on the basis of the first authorization key.

STEP 6 Transmit the message from the computer to the RFID transponder.

STEP 7 Transmit the message from the RFID transponder to the RFID.

STEP 8 Process the message by the privacy circuit.

STEP 9 Where the message is not formatted, encrypted or encoded at least partially in mathematical relationship to the first authorization key, deny authority to the controller to execute instructions received in a message.

END

FIG. 8

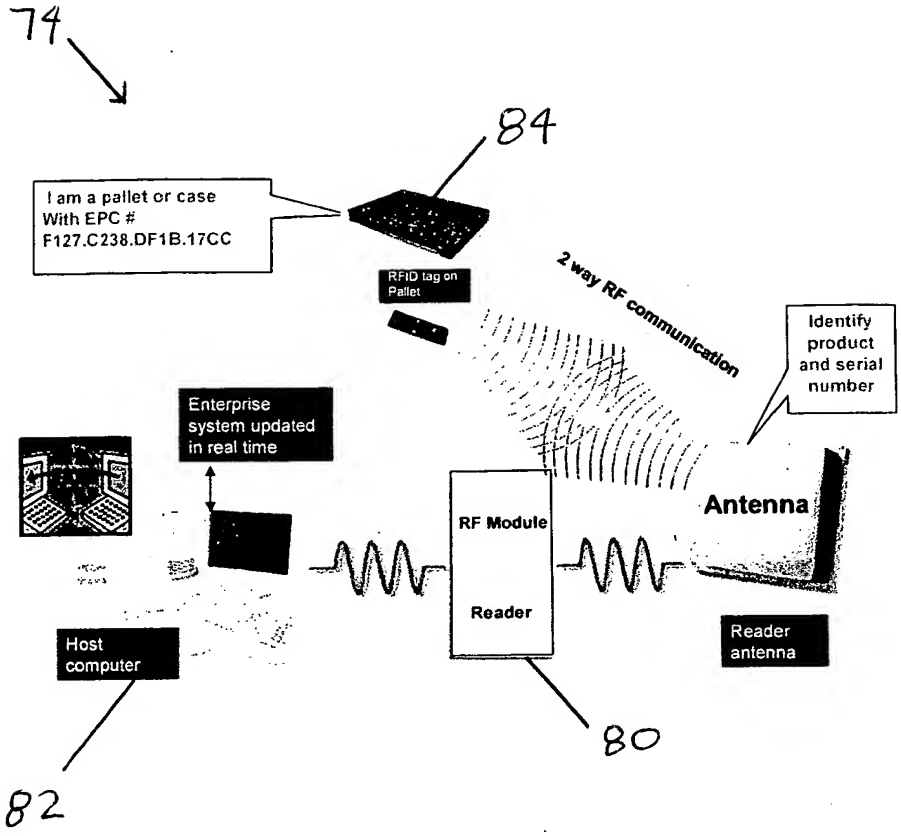
74
84
I am a pallet or case
With EPC #
F127.C238.DF1B.17CC
RFID tag on Pallet
2 way RF communication
Identify product and serial number
Enterprise system updated in real time
Antenna
RF Module
Reader
Reader antenna
Host computer
80
82

FIG. 9

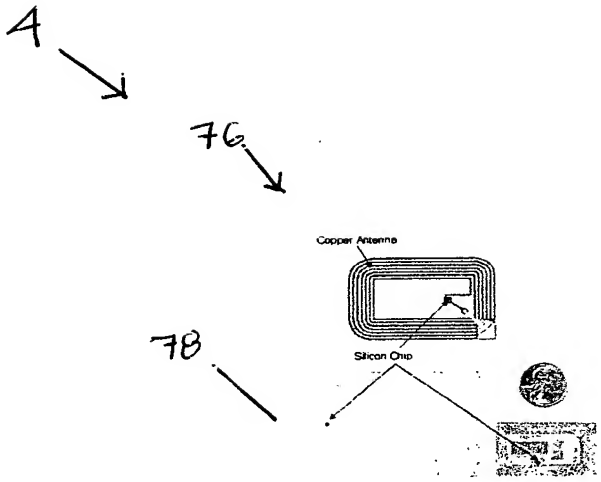

FIG. 10

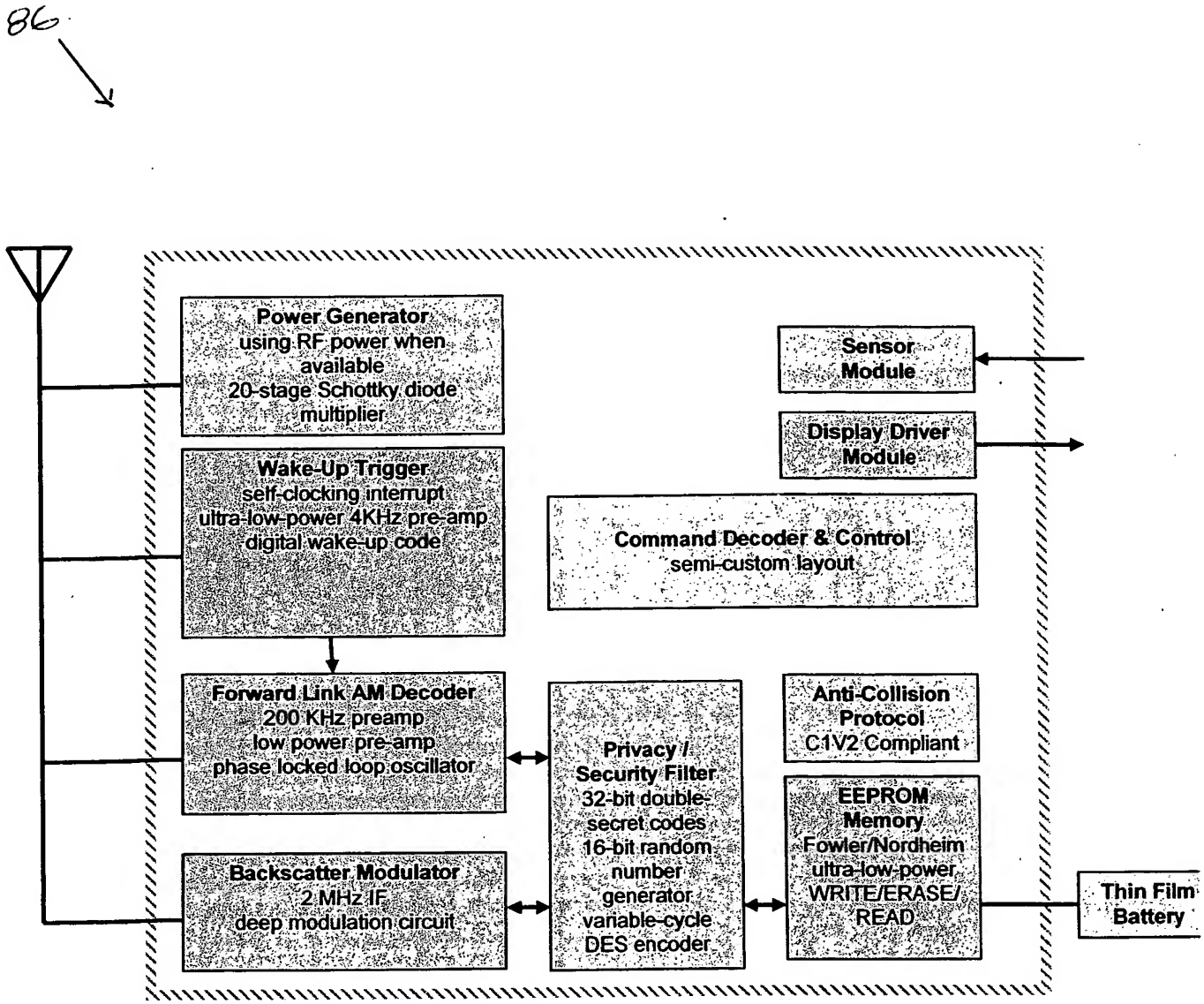
86
Power Generator
using RF power when available
20-stage Schottky diode multiplier
Wake-Up Trigger
self-clocking interrupt
ultra-low-power 4KHz pre-amp
digital wake-up code
Forward Link AM Decoder
200 KHz preamp
low power pre-amp
phase locked loop oscillator
Backscatter Modulator
2 MHz IF
deep modulation circuit
Privacy / Security Filter
32-bit double-secret codes
16-bit random number generator
variable-cycle DES encoder
Sensor Module
Display Driver Module
Command Decoder & Control
semi-custom layout
Anti-Collision Protocol
C1V2 Compliant
EEPROM Memory
Fowler/Nordheim
ultra-low-power
WRITE/ERASE/READ
Thin Film Battery

FIG. 11

4F

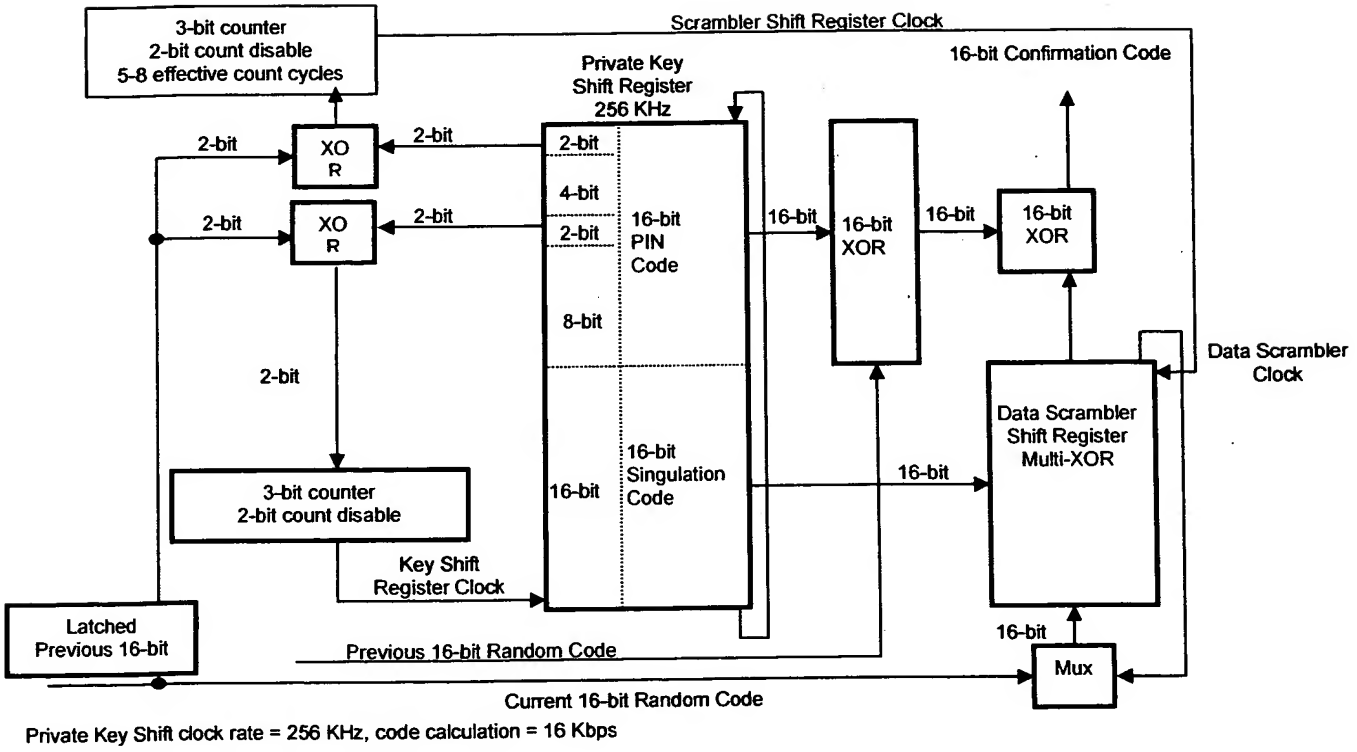
3-bit counter
2-bit count disable
5-8 effective count cycles
Scrambler Shift Register Clock
16-bit Confirmation Code
Private Key
Shift Register
256 KHz
2-bit
XO
R
2-bit
2-bit
XO
R
2-bit
2-bit
4-bit
2-bit
16-bit
PIN
Code
8-bit
16-bit
16-bit
XOR
16-bit
16-bit
XOR
Data Scrambler
Clock
2-bit
3-bit counter
2-bit count disable
16-bit
16-bit
Singulation
Code
16-bit
Data Scrambler
Shift Register
Multi-XOR
Key Shift
Register Clock
Latched
Previous 16-bit
Previous 16-bit Random Code
16-bit
Mux
Current 16-bit Random Code
Private Key Shift clock rate = 256 KHz, code calculation = 16 Kbps

FIG. 12

Step 1. Create Authenticated Personal Document

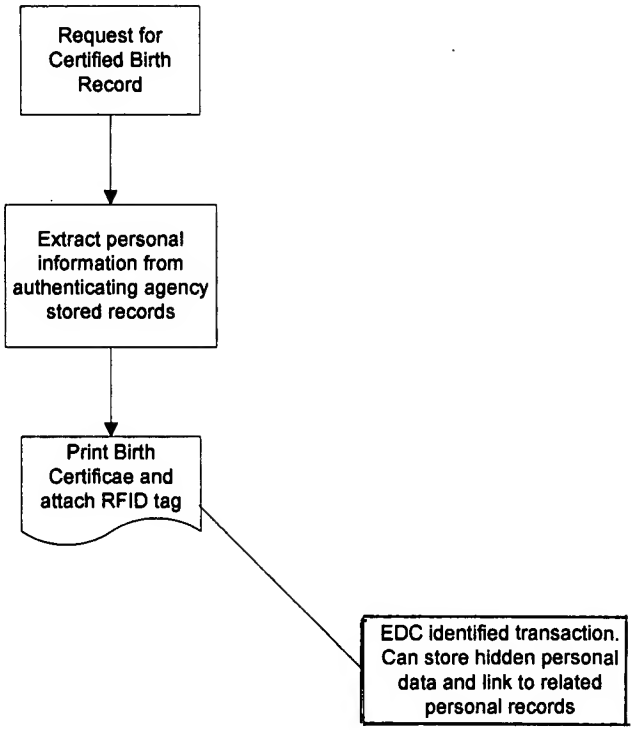

FIG. 13

Step 2. Request Personal Services. Prove Identity with Birth Certificate

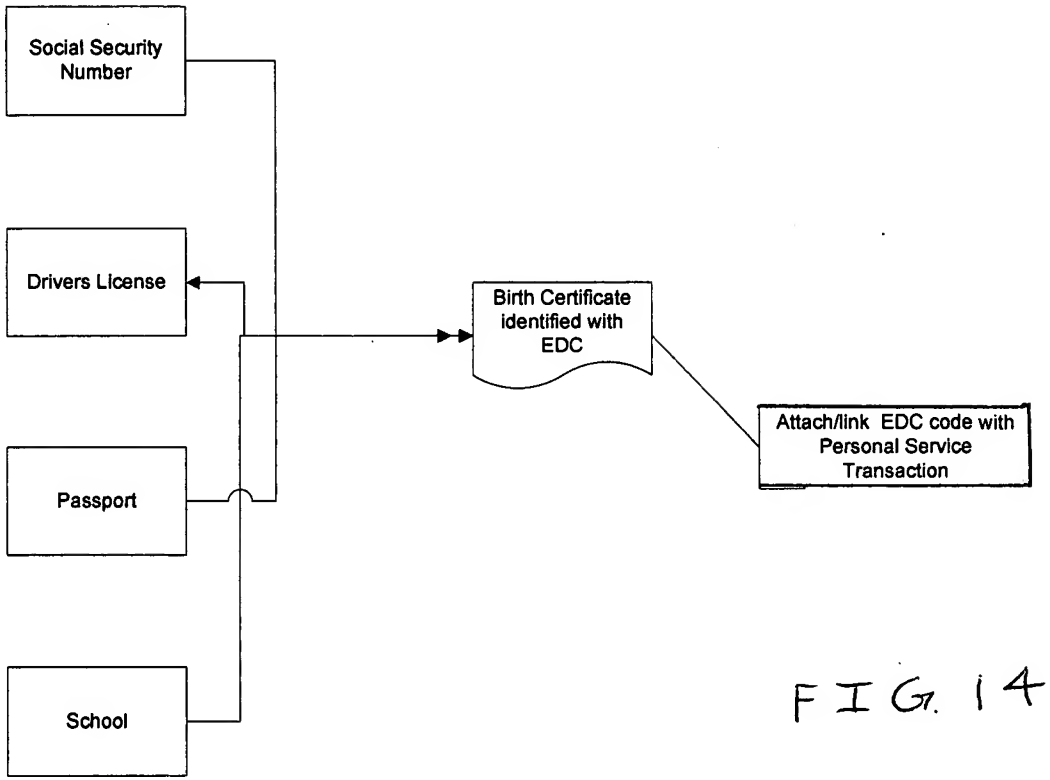

FIG. 14

Step 3: Life Event Status Change

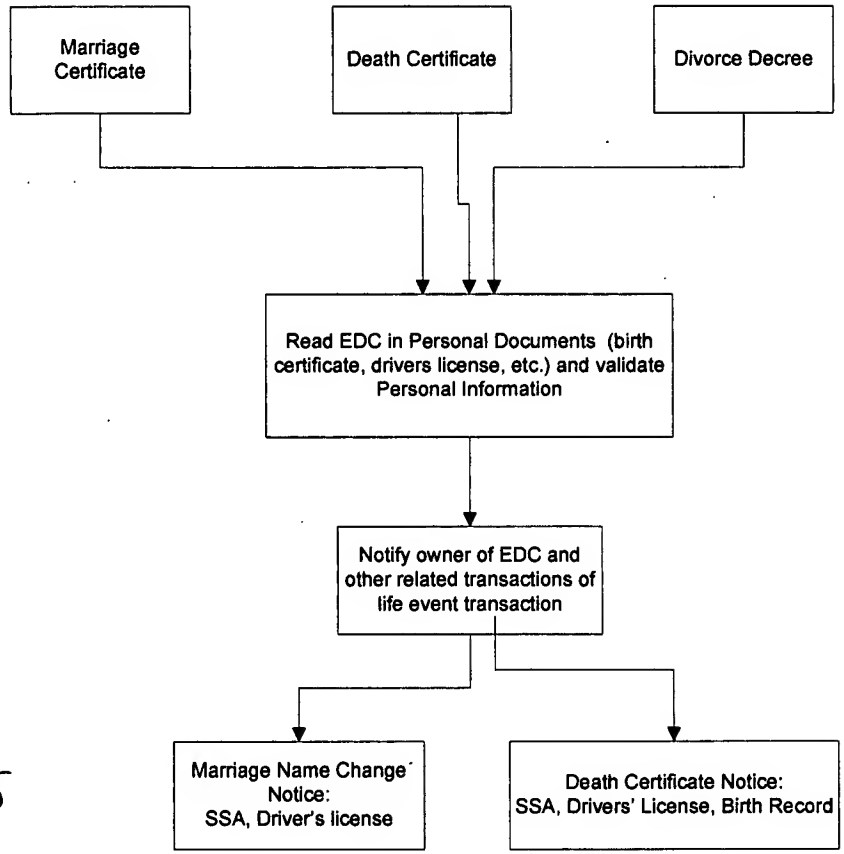

FIG. 15